



# TECHNICAL DATA

## UREA-TUFF 4290

### SELF-LEVELING ALIPHATIC POLYUREA TOP COAT

#### 1. PRODUCT

UREA-TUFF 4290 is a high solids content, two-component, liquid applied, aliphatic industrial maintenance coating based on new polyurea technology. It can be used as a high solids top coat for many of the polyurea and polyurethane deck coating systems supplied by TUFFLEX Polymers (TUFFLEX). UREA-TUFF 4290 displays a lower level of irritating odors and is formulated with environmentally friendly Oxol-100, resulting in a minty smell.

#### 2. FEATURES

UREA-TUFF 4290 has improved chemical resistance and water resistance compared to conventional elastomeric aliphatic protective coatings. It is formulated with adhesion enhancing chemicals to form a long term chemical bond to silica based texturing granules. UREA-TUFF 4290 has an extended gel time for better flow out and more uniform finish which can usually be walked on within a few hours after being applied.

#### 3. BENEFITS

Easy application, by squeegee, roller or low pressure airless spray  
Superior water resistance, excellent weathering properties  
Rapid cure at room temperatures as well as lower temperature or lower humidity conditions  
High hiding with one coat application  
Color stable aliphatic polyurea-ester-urethane backbone  
High tensile strength, high abrasion resistance

#### 4. PRODUCT DESCRIPTION

**Basic Uses:** UREA-TUFF 4290 is an abrasion-resistant and weather resistant Top Coat designed for use in TUFFLEX Traffic Bearing and Roof Coating Systems where there is a requirement for a low VOC and fast curing top coat. Please refer to the pertinent Application Specification Data Sheet for system application details.

UREA-TUFF 4290 is used where optimum weather resistance, abrasion resistance and color stability are required. It is typically used in conjunction with the UREA-TUFF 4260 & 4270 series Polyurea membranes. The cured UREA-TUFF 4290 top coat easily withstands the extreme environmental conditions encountered in exterior construction environments. When used in conjunction with elastomeric base membranes, the UREA-TUFF 4290 composite systems are designed to handle the substrate expansion and contraction which is typical during low temperature to high temperature thermal cycling. UREA-TUFF 4290 may also be used alone as an abrasion-resisting maintenance coating.

**LIMITATIONS:** Containers of Part A (base resin) that have been opened must be used within 7 days, since the product is a moisture-reactive material that will set up when exposed to moisture in the air. Keep lid tightly sealed when material is not in use.

**Shelf Life:** Nine (9) months after manufacture when continuously stored indoors in unopened metal pails at temperatures under 80°F.

UREA-TUFF 4290 is available in two (2) standard colors. Several non-stocking colors are available with a minimum order of 180 gallons per batch. Contact our Technical Service Department for further information.

#### 5. INSTALLATION

**Surface Preparation:** All surfaces to be coated with UREA-TUFF 4290 must be thoroughly dry and free of all contaminants, including oxidation on old top coats or base coats as well as construction debris or deposits.

**Application:** Always stir the pigmented Part A thoroughly prior to use. UREA-TUFF 4290 is normally applied at a rate of 100-133 square feet per gallon, per coat, resulting in a wet film thickness of 12 to 16 wet mils.

Coverage will vary depending on the texture, aggregate size or degree of surface porosity. The larger the aggregate used, the lower will be the coverage due to the larger surface area of the aggregate. UREA-TUFF 4290 is easily applied by squeegee, roller, or notched trowel. Always follow by backrolling. At 50% relative humidity and 77°F, the coating will reach an initial set within 2 hours. Light traffic should not be allowed on the finished coating for 3-4 hours.

#### 6. MAINTENANCE

If a UREA-TUFF 4290 coated surface is damaged, it can be repaired by light sanding or by scrubbing with a solution of TSP and water, followed by a thorough rinse with water. Allow to dry. Follow this with a solvent wipe with xylene or acetone mixed with TUFFLEX-7113 penetrating cleaning additive. When the surface is dry, apply additional UREA-TUFF 4290.

#### 7. TECHNICAL SERVICE

Technical Assistance is available by contacting:

**TUFFLEX POLYMERS**  
10880 Poplar Avenue  
Fontana, California 92337  
Phone: (909) 349-2016  
Fax: (909) 823-6309

#### 8. PRECAUTIONS

This product contains aliphatic isocyanates, low viscosity amine chain extenders and petroleum hydrocarbon solvents. Read the container-precautionary labels and Safety Data Sheet (SDS) carefully. Exposure to urethanes and petroleum solvents may cause allergic skin and respiratory reaction. Personnel applying coatings containing petroleum solvents and isocyanate prepolymers should wear protective clothing, goggles and gloves and should use only with adequate ventilation and respiratory protective gear. Avoid contact of material with skin or eyes and avoid breathing vapors. Mix and apply only in well-ventilated areas. Read the appropriate SDS prior to handling the epoxy primers or the UREA-TUFF 4290 coating components. **THIS PRODUCT IS FOR PROFESSIONAL USE ONLY.**

#### 9. LIMITED WARRANTY

TUFFLEX Polymers (TUFFLEX) warrants this product to be free of defects in workmanship and materials only at the time of shipment from our factory. If any TUFFLEX materials prove to contain manufacturing defects that substantially affect their performance, TUFFLEX will, at its option, replace the materials or refund its purchase price.

This limited warranty is the only warranty extended by TUFFLEX with respect to its materials. There are no other warranties, including the implied warranties of merchantability and fitness for a particular purpose. TUFFLEX specifically disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever.

The dollar value of TUFFLEX's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the TUFFLEX material in question.

10. TECHNICAL DATA

**UREA-TUFF 4290**

<i>PROPERTY</i>	<i>TYPICAL VALUE</i>	<i>ASTM TEST METHOD</i>
Polymer Composition	Aliphatic Polyurea Polyurethane	-----
Solids Content (By Weight) (Mixed Material)	80 ± 2%	D-1353
Weight Per Gallon	10.6 ± 0.2 lbs.	D-1475
VOC Content (Mixed Material)	Less than 100 gm/l	Calculated
Flash Point (Mixed Material)	Above 116°F	D-93
Tack-Free Time @77°F, 50% R.H. @ 12 mils	2 hours	-----
Tensile Strength	3750 ± 400 psi	D-412
Ultimate Elongation	175 ± 50%	D-412
Hardness, Shore A	90 ± 5	D-2240
Adhesion to Base Membrane	30 pli	Peel Adhesion
Moisture Vapor Transmission @ 20 mils	0.1 perms	E-96
Abrasion Resistance, Inch Loss	Less than .001	C-502 Tabor Abrasion, 1000 Rev, 1000 Gm. Weight, CS-17 Wheel
Tear Strength	350 ± 50 lb./in.	D-1004
Chemical Resistance (Commonly encountered acids, salts, and oils)	Excellent	D-2299
Weathering Resistance	No Chalking @ 2000 hours	G-23
Service Temperature Range	-30°F to +200°F	-----

UREA-TUFF 4290 (14)